

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



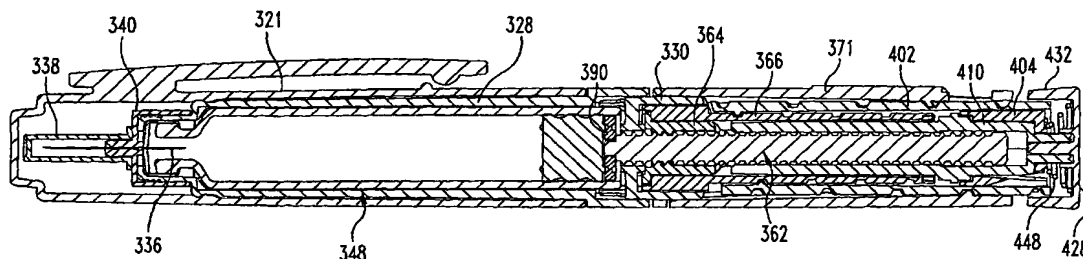
(43) International Publication Date
3 March 2005 (03.03.2005)

PCT

(10) International Publication Number
WO 2005/018721 A1

- (51) International Patent Classification⁷: **A61M 5/315**
- (21) International Application Number:
PCT/US2004/022312
- (22) International Filing Date: 9 August 2004 (09.08.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/494,499 12 August 2003 (12.08.2003) US
- (71) Applicant (for all designated States except US): **ELI LILLY AND COMPANY** [US/US]; Lilly Corporate Center, Indianapolis, IN 46285 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DERUNTZ, Otto, Daniel** [US/US]; 20 Kimberly Lane, Dunstable, MA 01827 (US). **FOCHT, Kenneth, Allen** [US/US]; 39 Powers Street, Needham, MA 02492 (US). **JACOBS, Alexander, Thomas** [US/US]; 64 Powderhouse Boulevard, Somerville, MA 02144 (US). **JOHANSEN, Elizabeth, Whitney** [US/US]; 2 Appian Way, Apartment 1, Allston, MA 02134 (US). **JUDSON, Jared, Alden** [US/US]; 114 South Main Street, Topsfield, MA 01983 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MEDICATION DISPENSING APPARATUS WITH TRIPLE SCREW THREADS FOR MECHANICAL ADVANTAGE



(57) Abstract: A medication dispensing apparatus that provides a mechanical advantage. During dose preparing, a nut rotating element (410) and a screw element (368) are in a first axial arrangement such that a screwing motion of the nut rotating element and screw element relative to the apparatus housing that moves the elements a first axial distance from a home position screws a nut (364) along a drive member threaded shaft (362) a second axial distance different than the first axial distance. During dose dispensing, the nut rotating element and the screw element are in a second axial arrangement, whereby a screwing motion of the screw element relative to the housing back toward the home position advances a plunger (366) in the distal direction to axially advance the nut and thereby the drive member and a fluid container piston to dispense medicine.

WO 2005/018721 A1